Claims

What is claimed is:

1. A method for manufacturing a rotatable cutting blade assembly, the method comprising the steps of:

selecting a cutting blade holder made of a first material and having a plurality of cutting blade channels;

inserting a piece of a second material adaptable for use as a cutting blade in each said cutting blade channel; and

bonding each said piece of second material to said cutting blade holder.

2. The method of Claim 1 wherein said cutting blade holder is made of a material that is responsive to an inductive heating process.

3. The method of Claim 1 wherein said cutting blade holder is made of a material that has a co-efficient of thermal expansion less than 0.000007 inch/degree Fahrenheit.

4. The method of Claim 1 wherein said cutting blade holder is molded.

5. The method of Claim 1 further comprising sharpening said pieces of the second material to form cutting blades.

6. The method of Claim 1 where in said second material is harder than said first material.

7. The method of Claim 1 wherein said pieces of the second material are formed into cutting blades before inserting them into each said channel in said cutting blade holder.

8. The method of Claim 1 wherein the step of bonding further comprises the steps of:

brazing with a solder along substantially the entire length of said cutter blade channel, and

heating to a temperature that will bond said cutting blade holder, said piece of the second material, and said solder together.

9. A method for manufacturing a rotatable cutting blade assembly, the method comprising the steps of:

selecting a cutting blade holder made of a first material and having a cutting blade channel;

inserting a piece of a second material adaptable for use as a cutting blade in each said cutting blade channel; and

bonding said piece of the second material to said cutting blade holder.

10. The method of Claim 9 wherein said cutting blade holder is made of a material that is responsive to an inductive heating process.

11. The method of Claim 9 wherein said cutting blade holder is made of a material that has a co-efficient of thermal expansion less than 0.000007 inch/degree Fahrenheit.

12. The method of Claim 9 wherein said cutting blade holder is molded.

13. The method of Claim 9 further comprising sharpening said pieces of the second material to form cutting blades.

14. The method of Claim 9 where in said second material is harder than said first material.

15. The method of Claim 9 wherein said pieces of the second material are formed into cutting blades before inserting them into each channel in said cutting blade holder.

16. The method of Claim 9 wherein the step of bonding further comprises the steps of:

brazing with a solder along substantially the entire length of said cutter blade channel, and

heating to a temperature that will bond said cutting blade holder, said piece of the second material, and said solder together.

17. An apparatus for cutting materials comprising:

a cutting blade assembly, comprising:

a) a cutting blade holder having a periphery and containing at least one cutting blade channel;

b) a cutting blade made of a second material secured in each channel of said cutting blade holder by bonding; and

a cup to which at least two cutting blade assemblies are attached.

18. The apparatus of Claim 17 wherein each said cutting blade holder is machined from a material that is responsive to an inductive heating process.

19. The apparatus of Claim 17 wherein each said cutting blade assembly is secured to said cup by a fastening mechanism inserted through a slot in said cutting blade holder and into a hole in said cup.

20. The apparatus of Claim 17 wherein said cup is secured to a machinery drive mechanism.

21. The apparatus of Claim 17 wherein each said cutting blade holder is machined from a material that has a co-efficient of thermal expansion less than 0.000007 inch/degree Fahrenheit

22. The apparatus of Claim 17 wherein each said cutting blade holder is molded.

23. The apparatus of Claim 17 wherein each said cutting blade is made of a harder material than each said cutting blade holder.

24. The apparatus of Claim 17 wherein each said cutting blade is bonded in said channel of each said cutting blade holder by means of:

brazing with a solder material placed in said channel, and

heating to a temperature that will bond said cutting blade holder, cutting blade and said solder materials together.

25. The apparatus of Claim 17 wherein each said cutting blade is made of some material other than carbide and coated with a layer of carbide, thereafter sharpened.

26. An extrusion process using the apparatus of Claim 17 for cutting extruded material.

27. An extrusion process according to Claim 26 further comprising rotating said apparatus at a speed of less than 1500 revolutions per minute.

28. An apparatus for cutting materials comprising:

a substantially symmetrical, rotatable cutting blade holder having a periphery and containing a plurality of cutting blade channels; and

at least one cutting blade made of a second material secured in each channel of said cutting blade holder.

29. The apparatus of Claim 28 wherein said plurality of cutting blades each have a initial cutting edge, wherein each said plurality of cutting edges has a maximum deviation from a common plane not greater than 0.005 inches.

30. The apparatus of Claim 28 wherein said cutting blade holder is machined from a material that is responsive to an inductive heating process.

31. The apparatus of Claim 28 wherein said apparatus is secured to a machinery drive mechanism.

32. The apparatus of Claim 28 wherein said cutting blade holder is machined from a material that has a co-efficient of thermal expansion less than 0.000007 inch/degree Fahrenheit

33. The apparatus of Claim 28 wherein said cutting blade holder is molded.

34. The apparatus of Claim 28 wherein said cutting blade made of a harder material than said cutting blade holder.

35. The apparatus of Claim 28 wherein said cutting blade is bonded in said channel of said cutting blade holder by means of:

brazing with a solder material placed in said channel, and

heating to a temperature that will bond said cutting blade holder, said cutting blade, and said solder together.

36. The apparatus of Claim 28 wherein said cutting blade holder is configured with a plurality of channels equally spaced about the periphery of said cutting blade holder, with the centerline of said channel being located in the centerline of the thickness of said cutting blade holder.

37. The apparatus of Claim 28 wherein said cutting blade is made of carbide and sharpened on at least one side of blade that is substantially parallel to said cutting blade holder, said cut edge making an angle that is substantially parallel to said cutting blade holder.

38. The apparatus of Claim 28 wherein said cutting blade is made of some material other than carbide and coated with a layer of carbide, thereafter sharpened.

39. An extrusion process using the apparatus of Claim 28 for cutting extruded material.

40. An extrusion process according to Claim 39 further comprising rotating said apparatus at a speed of less than 1500 revolutions per minute.